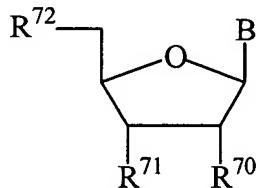


Please cancel claims 1-69 without prejudice.

Please add new claims 70-105 as follows:

-- 70. A labeled nucleoside/tide or nucleoside/tide analog comprising a rhodamine dye conjugated by a linker to a nucleoside/tide or nucleoside/tide analog, wherein:

the rhodamine is a rhodamine-type parent xanthene having attached to the xanthene C9 carbon a phenyl group that is further substituted with an ortho carboxy or ortho sulfonate group or a salt thereof, one to three substituted or unsubstituted aminopyridinium groups and a substituted or unsubstituted alkylthio, or arylthio group; and the nucleoside/tide or nucleoside/tide analog comprises the structure:

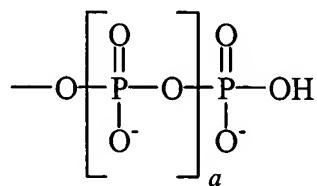


wherein:

B is a nucleobase selected from a purine, a 7-deazapurine, an 8-aza,7-deazapurine, a pyrimidine, a normal nucleobase and a common analog of a normal nucleobase;

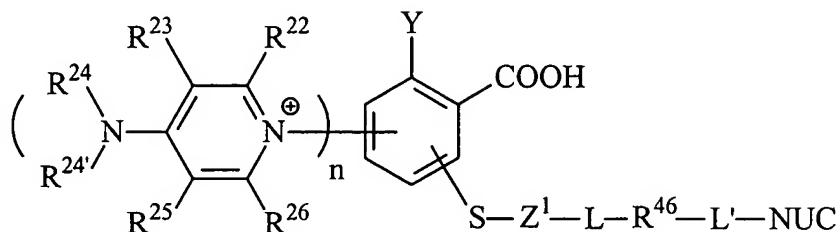
R<sup>70</sup> and R<sup>71</sup>, when taken alone, are each independently selected from hydrogen, hydroxyl and a moiety which blocks polymerase-mediated template-directed polymerization, or when taken together form a bond such that the illustrated sugar is 2',3'-didehydroribose; and

R<sup>72</sup> is selected from hydroxyl, a phosphate ester having the formula:



where *a* is an integer from 0 to 2, and a phosphate ester analog, or a salt thereof.

71. The labeled nucleoside/tide or nucleoside/tide analog of claim 70 comprising the formula:



wherein:

$Y$  is a rhodamine-type parent xanthene ring attached to the illustrated phenyl group at the xanthene C9 carbon;

$R^{22}$ ,  $R^{23}$ ,  $R^{25}$ , and  $R^{26}$  are independently selected from hydrogen and ( $C_1-C_6$ ) alkyl;

$R^{24}$ , when taken alone, is ( $C_1-C_6$ ) alkyl, or when taken together with  $R^{24'}$  is ( $C_4-C_{10}$ ) alkyldiyl, ( $C_4-C_6$ ) alkyleneo, ( $C_4-C_6$ ) heteroalkyldiyl and ( $C_4-C_6$ ) heteroalkyleneo;

$R^{24'}$ , when taken alone, is ( $C_1-C_6$ ) alkyl, or when taken together with  $R^{24}$  is ( $C_4-C_{10}$ ) alkyldiyl, ( $C_4-C_6$ ) alkyleneo, ( $C_4-C_6$ ) heteroalkyldiyl and ( $C_4-C_6$ ) heteroalkyleneo;

$n$  is 1, 2, or 3;

$S$  is sulfur;

$Z^1$  is selected from ( $C_1-C_{12}$ ) alkyldiyl, ( $C_1-C_{12}$ ) alkyldiyl independently substituted with one or more of the same or different  $W^1$  groups, ( $C_5-C_{14}$ ) aryldiyl, and ( $C_5-C_{14}$ ) aryldiyl independently substituted with one or more of the same or different  $W^2$  groups;

$W^1$  is selected from  $-X$ ,  $-R$ ,  $=O$ ,  $-OR$ ,  $-SR$ ,  $=S$ ,  $-NRR$ ,  $=NR$ ,  $-CX_3$ ,  $-CN$ ,  $-OCN$ ,  $-SCN$ ,  $-NCO$ ,  $-NCS$ ,  $-NO$ ,  $-NO_2$ ,  $=N_2$ ,  $-N_3$ ,  $-S(O)_2O^-$ ,  $-S(O)_2OH$ ,  $-S(O)_2R$ ,  $-C(O)R$ ,  $-C(O)X$ ,  $-C(S)R$ ,  $-C(S)X$ ,  $-C(O)OR$ ,  $-C(O)O^-$ ,  $-C(S)OR$ ,  $-C(O)SR$ ,  $-C(S)SR$ ,  $-C(O)NRR$ ,  $-C(S)NRR$  and  $-C(NR)NRR$ ;

$W^2$  is selected from  $-R$ ,  $-OR$ ,  $-SR$ ,  $-NRR$ ,  $-S(O)_2O^-$ ,  $-S(O)_2OH$ ,  $-S(O)_2R$ ,  $-C(O)R$ ,  $-C(O)X$ ,  $-C(S)R$ ,  $-C(S)X$ ,  $-C(O)OR$ ,  $-C(O)O^-$ ,  $-C(S)OR$ ,  $-C(O)SR$ ,  $-C(S)SR$ ,  $-C(O)NRR$ ,  $-C(S)NRR$  and  $-C(NR)NRR$ ;

L is selected from a bond, (C<sub>1</sub>–C<sub>12</sub>) alkyldiyl, (C<sub>1</sub>–C<sub>12</sub>) substituted alkyldiyl, (C<sub>6</sub>–C<sub>26</sub>) arylalkyldiyl, –O–, –S–, –NR–, –C(O)O–, –C(O)NR–, –NRS(O)<sub>2</sub>–, –NR–NR–, –NRC(O)O–, and –NRC(O)NR–;

R<sup>46</sup> is selected from –C(O)NR–, –C(O)O–, and –C(O)S–,

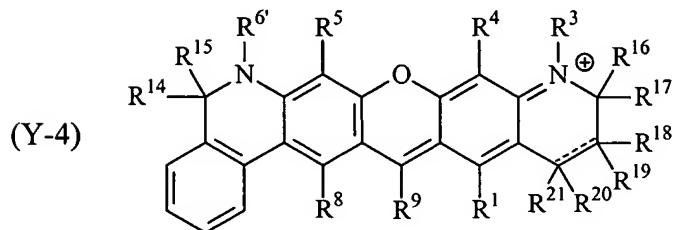
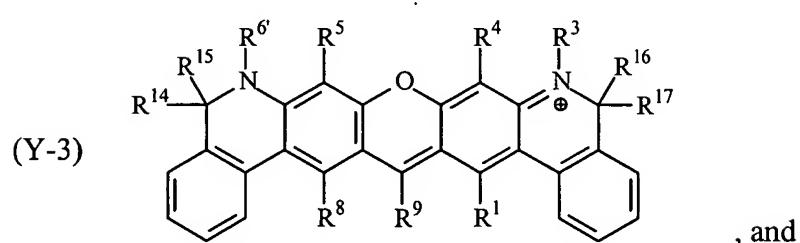
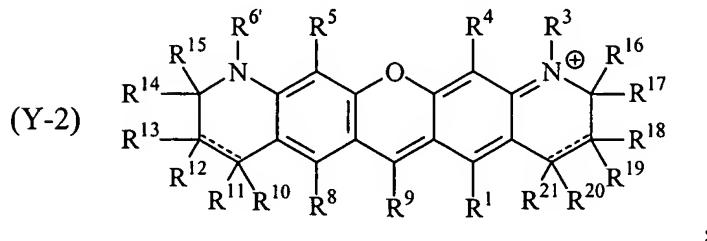
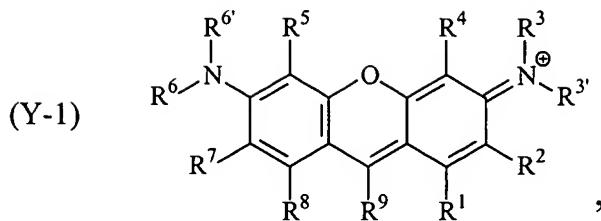
L' is selected from (C<sub>1</sub>–C<sub>20</sub>) alkyldiyl, (C<sub>1</sub>–C<sub>20</sub>) heteroalkyldiyl, (C<sub>1</sub>–C<sub>20</sub>) alkylene, (C<sub>1</sub>–C<sub>20</sub>) heteroalkylene, (C<sub>6</sub>–C<sub>26</sub>) arylalkyldiyl, (C<sub>5</sub>–C<sub>20</sub>) heteroarylalkyldiyl, and substituted forms thereof; and

NUC is a nucleoside/tide or nucleoside/tide analog;

each R is independently selected from hydrogen, (C<sub>1</sub>–C<sub>6</sub>) alkyl, (C<sub>5</sub>–C<sub>20</sub>) aryl, (C<sub>6</sub>–C<sub>26</sub>) arylalkyl, and (C<sub>5</sub>–C<sub>20</sub>) arylaryl; or when two R groups on the same nitrogen atom are taken together, those two R groups are (C<sub>4</sub>–C<sub>10</sub>) alkyldiyl or (C<sub>4</sub>–C<sub>10</sub>) alkylene; and

each X is independently a halogen.

72. The labeled nucleoside/tide or nucleoside/tide analog of claim 71 wherein Y comprises the rhodamine-type parent xanthene ring structures:



and a salt thereof, wherein:

R<sup>1</sup> and R<sup>2</sup> when taken alone, are independently hydrogen or (C<sub>1</sub>–C<sub>6</sub>) alkyl;

R<sup>3</sup> and R<sup>3'</sup> when taken alone, are independently selected from hydrogen, (C<sub>1</sub>–C<sub>6</sub>) alkyl, (C<sub>5</sub>–C<sub>14</sub>) aryl and (C<sub>5</sub>–C<sub>14</sub>) arylaryl, or when taken together is (C<sub>4</sub>–C<sub>6</sub>) alkyldiyl or (C<sub>4</sub>–C<sub>6</sub>) alkylene, or when individually taken together with R<sup>2</sup> or R<sup>4</sup> is (C<sub>2</sub>–C<sub>6</sub>) alkyldiyl or (C<sub>2</sub>–C<sub>6</sub>) alkylene;

R<sup>4</sup>, when taken alone, is selected from hydrogen and (C<sub>1</sub>–C<sub>6</sub>) alkyl, or when taken together with R<sup>3</sup> or R<sup>3'</sup> is (C<sub>2</sub>–C<sub>6</sub>) alkyldiyl or (C<sub>2</sub>–C<sub>6</sub>) alkylene;

R<sup>5</sup>, when taken alone, is selected from hydrogen and (C<sub>1</sub>–C<sub>6</sub>) alkyl, or when taken together with R<sup>6</sup> or R<sup>6'</sup> is (C<sub>2</sub>–C<sub>6</sub>) alkyldiyl or (C<sub>2</sub>–C<sub>6</sub>) alkylene;

$R^6$  and  $R^{6'}$  when taken alone, are selected from hydrogen, ( $C_1$ - $C_6$ ) alkyl, ( $C_5$ - $C_{14}$ ) aryl and arylaryl, or when taken together are ( $C_4$ - $C_6$ ) alkyldiyl or alkylene, or when individually taken together with  $R^5$  or  $R^7$  is ( $C_2$ - $C_6$ ) alkyldiyl or alkylene;

$R^7$ , when taken alone, is selected from hydrogen and ( $C_1$ - $C_6$ ) alkyl, or when taken together with  $R^6$  or  $R^{6'}$  is ( $C_2$ - $C_6$ ) alkyldiyl or alkylene;

$R^8$ , when taken alone, is selected from hydrogen and ( $C_1$ - $C_6$ ) alkyl;

$R^{10}$ ,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ ,  $R^{15}$ ,  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$  and  $R^{21}$  are each independently selected from hydrogen and ( $C_1$ - $C_6$ ) alkyl, or

when  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  taken together are ( $C_5$ - $C_{14}$ ) aryleno or

$(C_5$ - $C_{14})$  aryleno substituted with one or more of the same or different ( $C_1$ - $C_6$ ) alkyl, or

when  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$  and  $R^{21}$  taken together are ( $C_5$ - $C_{14}$ ) aryleno or aryleno

substituted with one or more of the same or different ( $C_1$ - $C_6$ ) alkyl; and

$R^9$  is the point of attachment to the xanthene C9 carbon.

73. The labeled nucleoside/tide or nucleoside/tide analog of claim 72 wherein  $R^2$  when taken together with  $R^3$  or  $R^{3'}$  is ( $C_2$ - $C_6$ ) alkyldiyl or ( $C_2$ - $C_6$ ) alkylene.

74. The labeled nucleoside/tide or nucleoside/tide analog of claim 72 wherein: an alkyldiyl or alkylene bridge formed by taking  $R^2$  together with  $R^3$  or  $R^{3'}$ ,  $R^7$  together with  $R^6$  or  $R^{6'}$ , or  $R^4$  together with and  $R^3$  or  $R^{3'}$ , is ethano, propano, 1,1-dimethylethano, 1,1-dimethylpropano or 1,1,3-trimethylpropano;

an aryleno bridge formed by taking  $R^1$  together with  $R^2$  is benzo or naphtho;

an alkyldiyl or alkylene bridge formed by taking  $R^3$  together with  $R^{3'}$ , or  $R^6$  together with  $R^{6'}$ , is butano;

an alkyldiyl or alkylene bridge formed by taking  $R^5$  together with  $R^6$  or  $R^{6'}$  is ethano, propano, 1,1-dimethylethano, 1,1-dimethylpropano and 1,1,3-trimethylpropano; and

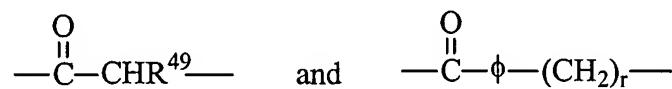
an aryleno bridge formed by taking  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  together, or  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$  and  $R^{21}$  together, is benzo.

75. The labeled nucleoside/tide or nucleoside/tide analog of claim 71 in which Z<sup>1</sup> is phenyldiyl.

76. The labeled nucleoside/tide or nucleoside/tide analog of Claim 71 in which L' is selected from: —C≡C—CH<sub>2</sub>— and —C≡C—CH<sub>2</sub>—O—CH<sub>2</sub>CH<sub>2</sub>—.

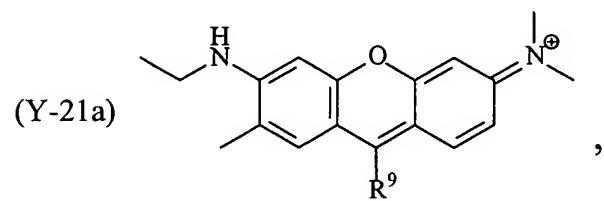
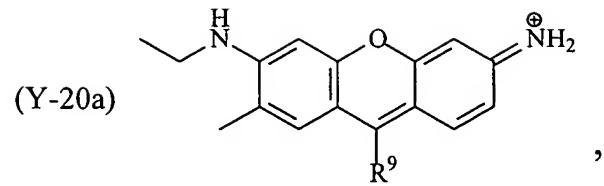
77. The labeled nucleoside/tide or nucleoside/tide analog of Claim 71 in which L' is: —C≡C—CH<sub>2</sub>—O—CH<sub>2</sub>CH<sub>2</sub>—N—R<sup>48</sup>— wherein R<sup>47</sup> is hydrogen or (C<sub>1</sub>—C<sub>6</sub>) alkyl, and R<sup>48</sup> is selected from:

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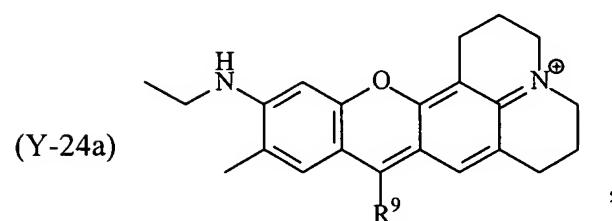
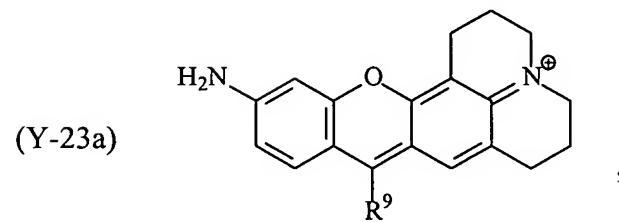
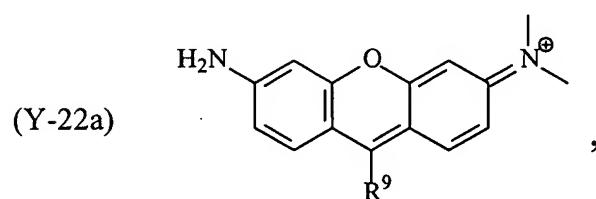


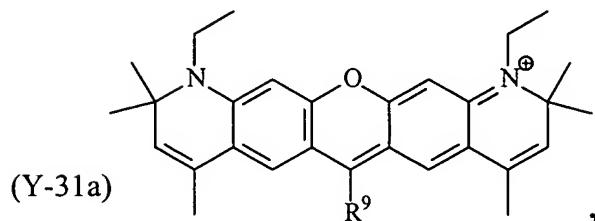
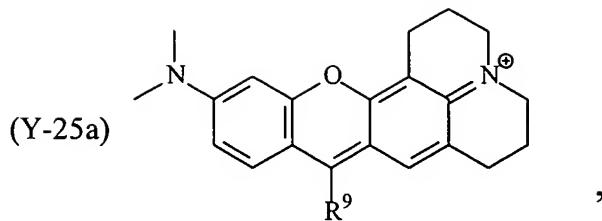
wherein each r is independently an integer from 1 to 6; R<sup>49</sup> is hydrogen, (C<sub>1</sub>—C<sub>6</sub>) alkyl, or an amino acid side chain; and φ is phenyldiyl or substituted phenyldiyl.

78. The labeled nucleoside/tide or nucleoside/tide analog of claim 71 in which Y is selected from the structures:

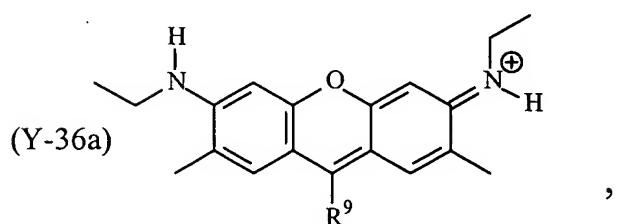
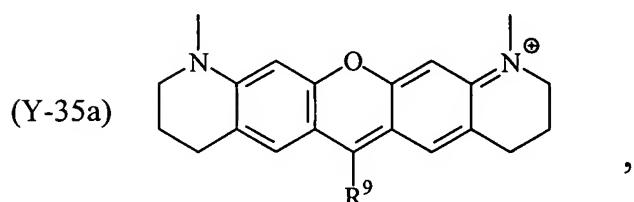
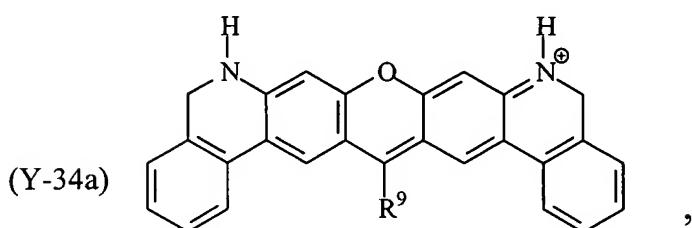


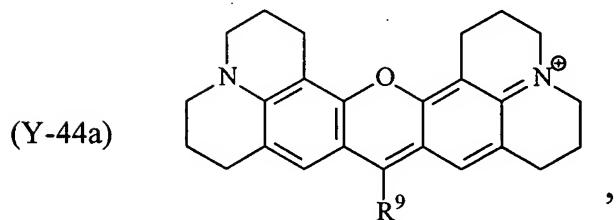
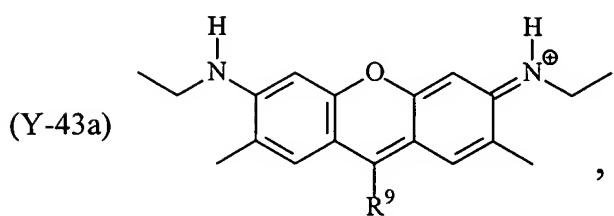
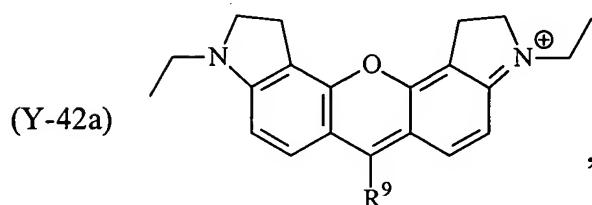
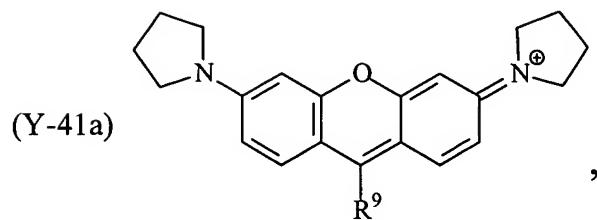
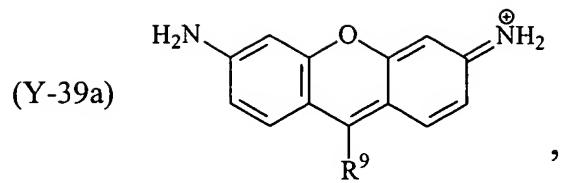
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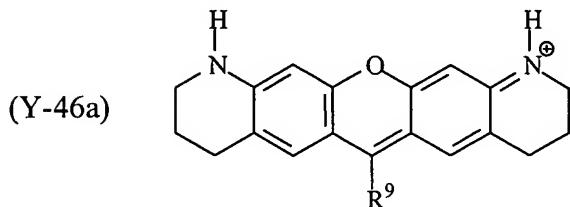
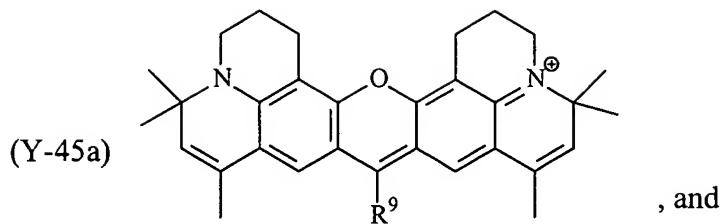




Al



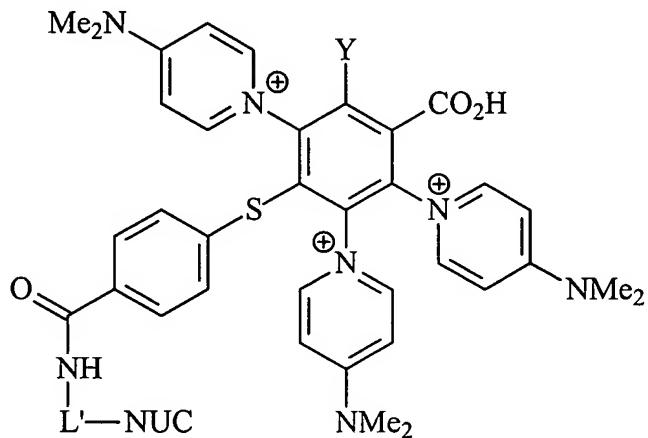




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79. The labeled nucleoside/tide or nucleoside/tide analog of claim 71 wherein R<sup>22</sup>, R<sup>23</sup>, R<sup>25</sup>, and R<sup>26</sup> are each hydrogen.

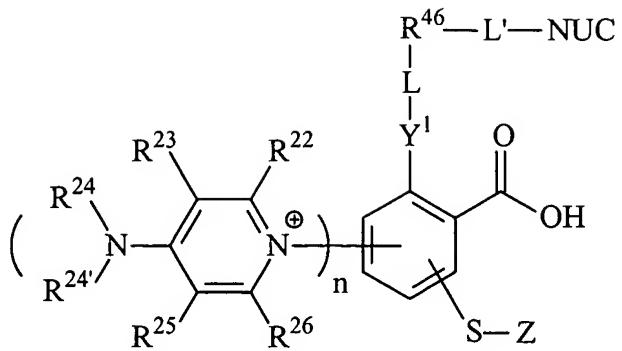
80. The labeled nucleoside/tide or nucleoside/tide analog of claim 71 which comprises the structure:



or a salt thereof.

81. The labeled nucleoside/tide or nucleoside/tide analog of Claim 80 in which L' is selected from: —C≡C—CH<sub>2</sub>— and —C≡C—CH<sub>2</sub>—O—CH<sub>2</sub>CH<sub>2</sub>—

82. The labeled nucleoside/tide or nucleoside/tide analog of claim 70 comprising the formula:



wherein:

Y<sup>1</sup> is a rhodamine-type parent xanthene ring attached to the illustrated phenyl group at the xanthene C9 carbon;

R<sup>22</sup>, R<sup>23</sup>, R<sup>25</sup>, and R<sup>26</sup> are independently selected from hydrogen and (C<sub>1</sub>-C<sub>6</sub>) alkyl;

R<sup>24</sup>, when taken alone, is (C<sub>1</sub>-C<sub>6</sub>) alkyl, or when taken together with R<sup>24'</sup> is (C<sub>4</sub>-C<sub>10</sub>) alkyldiyl, (C<sub>4</sub>-C<sub>6</sub>) alkylene, (C<sub>4</sub>-C<sub>6</sub>) heteroalkyldiyl or (C<sub>4</sub>-C<sub>6</sub>) heteroalkylene;

R<sup>24'</sup>, when taken alone, is (C<sub>1</sub>-C<sub>6</sub>) alkyl, or when taken together with R<sup>24</sup> is (C<sub>4</sub>-C<sub>10</sub>) alkyldiyl, (C<sub>4</sub>-C<sub>6</sub>) alkylene, (C<sub>4</sub>-C<sub>6</sub>) heteroalkyldiyl or (C<sub>4</sub>-C<sub>6</sub>) heteroalkylene;

n is 1, 2, or 3;

S is sulfur;

Z is (C<sub>1</sub>-C<sub>12</sub>) alkyl, (C<sub>1</sub>-C<sub>12</sub>) alkyl substituted with one or more of the same or different W<sup>1</sup> groups, (C<sub>5</sub>-C<sub>20</sub>) aryl, and (C<sub>5</sub>-C<sub>20</sub>) aryl substituted with one or more of the same or different W<sup>2</sup> groups;

W<sup>1</sup> is selected from -X, -R, =O, -OR, -SR, =S, -NRR, =NR, -CX<sub>3</sub>, -CN, -OCN, -SCN, -NCO, -NCS, -NO, -NO<sub>2</sub>, =N<sub>2</sub>, -N<sub>3</sub>, -S(O)<sub>2</sub>O<sup>-</sup>, -S(O)<sub>2</sub>OH, -S(O)<sub>2</sub>R, -C(O)R, -C(O)X, -C(S)R, -C(S)X, -C(O)OR, -C(O)O<sup>-</sup>, -C(S)OR, -C(O)SR, -C(S)SR, -C(O)NRR, -C(S)NRR and -C(NR)NRR;

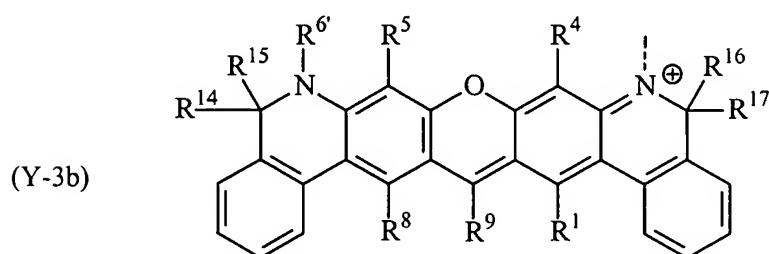
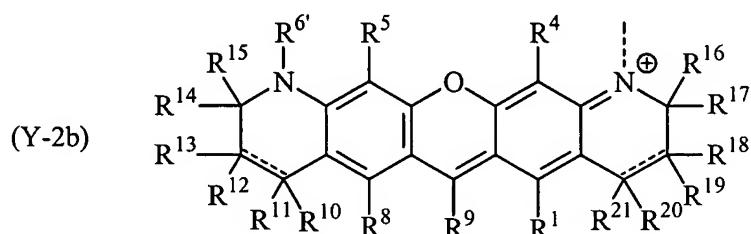
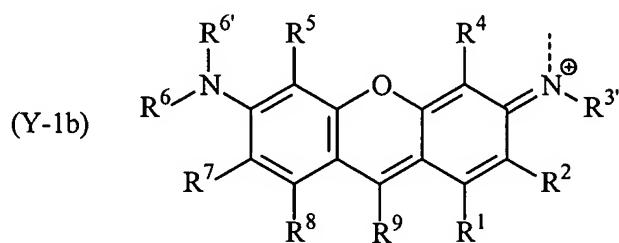
W<sup>2</sup> is selected from -R, -OR, -SR, -NRR, -S(O)<sub>2</sub>O<sup>-</sup>, -S(O)<sub>2</sub>OH, -S(O)<sub>2</sub>R, -C(O)R, -C(O)X, -C(S)R, -C(S)X, -C(O)OR, -C(O)O<sup>-</sup>, -C(S)OR, -C(O)SR, -C(S)SR, -C(O)NRR, -C(S)NRR and -C(NR)NRR;

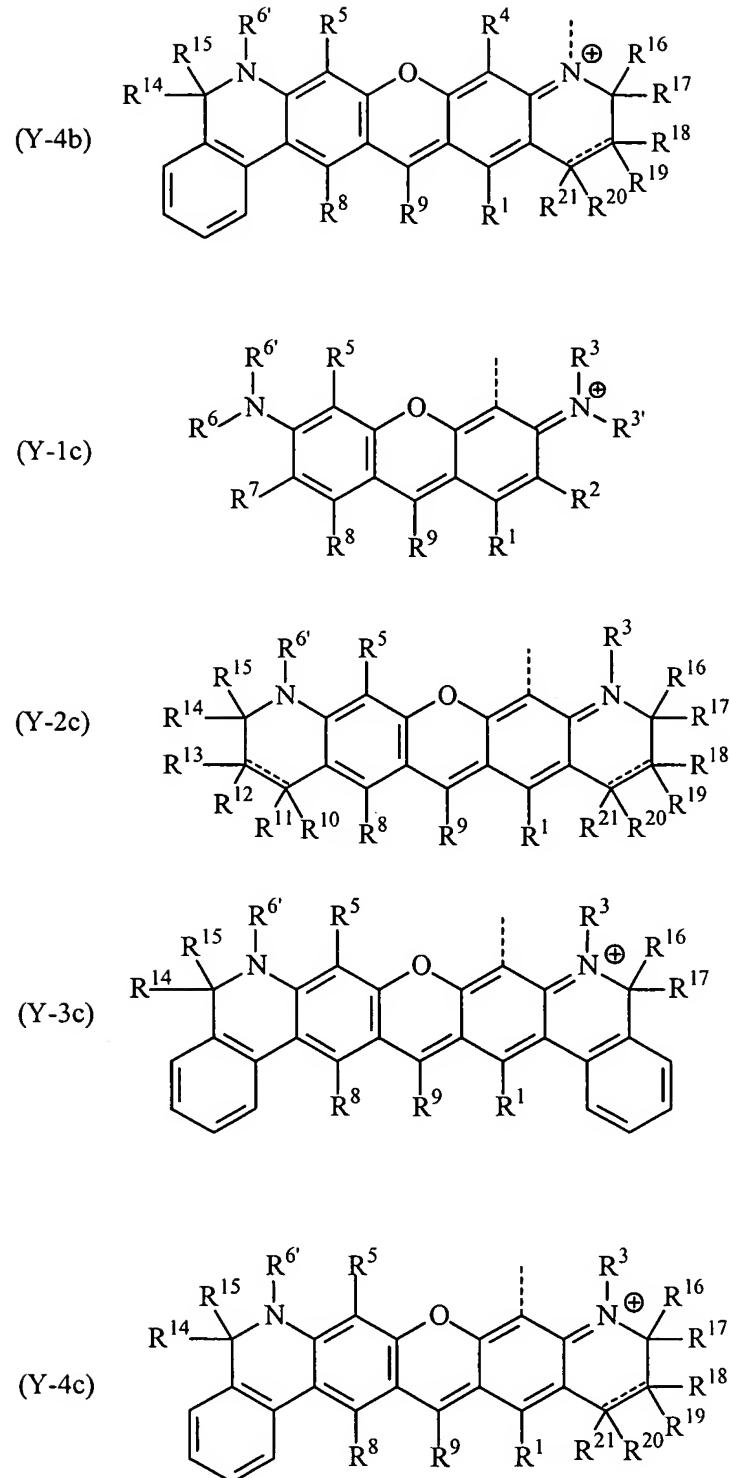
L is a selected from a bond, (C<sub>1</sub>-C<sub>12</sub>) alkyldiyl, (C<sub>1</sub>-C<sub>12</sub>) substituted alkyldiyl, (C<sub>6</sub>-C<sub>26</sub>) arylalkyldiyl, -O-, -S-, -NR-, -C(O)O-, -C(O)NR-, -NRS(O)<sub>2</sub>-, -NR-NR-, -NRC(O)O-, and -NRC(O)NR-;

$R^{46}$  is selected from  $-C(O)NR-$ ,  $-C(O)O-$ , and  $-C(O)S-$ ,  
 $L'$  is selected from ( $C_1-C_{20}$ ) alkyldiyl, ( $C_1-C_{20}$ ) heteroalkyldiyl, ( $C_1-C_{20}$ ) alkylene, ( $C_1-C_{20}$ ) heteroalkylene, ( $C_6-C_{26}$ ) arylalkyldiyl, ( $C_5-C_{20}$ ) heteroarylalkyldiyl, and substituted forms thereof; and

NUC is a nucleoside/tide or nucleoside/tide analog;  
each R is independently selected hydrogen, ( $C_1-C_6$ ) alkyl, ( $C_5-C_{20}$ ) aryl, ( $C_6-C_{20}$ ) arylalkyl, and ( $C_6-C_{20}$ ) arylaryl; or when two R groups on the same nitrogen atom are taken together, those two R groups are ( $C_4-C_{10}$ ) alkyldiyl or ( $C_4-C_{10}$ ) alkylene; and  
each X is independently a halogen.

83. The labeled nucleoside/tide or nucleoside/tide analog of Claim 82 in which  $Y^1$  is selected from:





wherein the dashed line at the nitrogen or C4 atom indicates the point of attachment of L.

84. The labeled nucleoside/tide or nucleoside/tide analog of claim 82 wherein:

an alkyldiyl or alkylene bridge formed by taking R<sup>2</sup> together with R<sup>3</sup>, R<sup>4</sup> together with R<sup>3'</sup>, R<sup>5</sup> together with R<sup>6</sup>, or R<sup>7</sup> together with R<sup>6'</sup>, is ethano, propano, 1,1-dimethylethano, 1,1-dimethylpropano or 1,1,3-trimethylpropano; and an aryleno bridge formed by taking R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup> and R<sup>13</sup> together or R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup> and R<sup>21</sup> together is benzo.

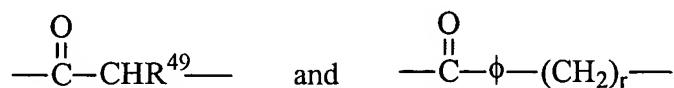
85. The labeled nucleoside/tide or nucleoside/tide analog of claim 82 in which L is selected from phenyldiyl and naphthyldiyl.

86. The labeled nucleoside/tide or nucleoside/tide analog of claim 82 in which L is -(CH<sub>2</sub>)<sub>i</sub>-φ- where i is an integer from 1 to 6 and φ is phenyldiyl or naphthyldiyl.

87. The labeled nucleoside/tide or nucleoside/tide analog of claim 82 in which Z is selected from phenyl, benzyl, naphthyl, pyridyl and purinyl.

88. The labeled nucleoside/tide or nucleoside/tide analog of Claim 82 in which L' is selected from: —C≡C—CH<sub>2</sub>— and —C≡C—CH<sub>2</sub>—O—CH<sub>2</sub>CH<sub>2</sub>— .

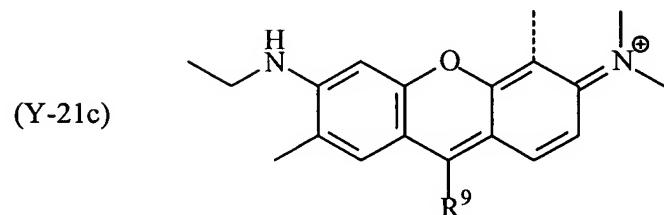
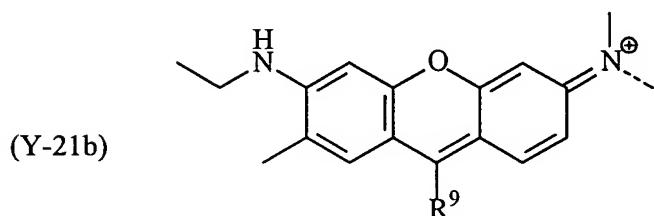
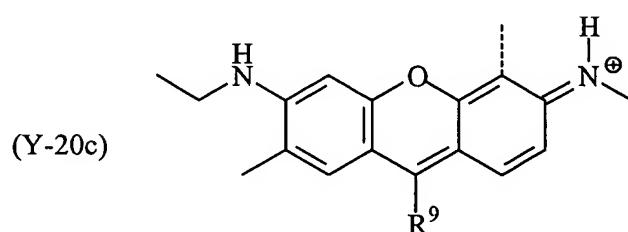
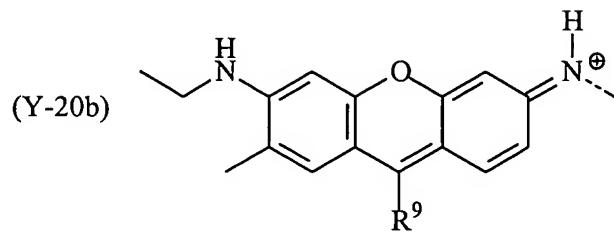
89. The labeled nucleoside/tide or nucleoside/tide analog of Claim 82 in which L' is: —C≡C—CH<sub>2</sub>—O—CH<sub>2</sub>CH<sub>2</sub>—N—R<sup>48</sup>— wherein R<sup>47</sup> is hydrogen or (C<sub>1</sub>—C<sub>6</sub>) alkyl, and R<sup>48</sup> is selected from:

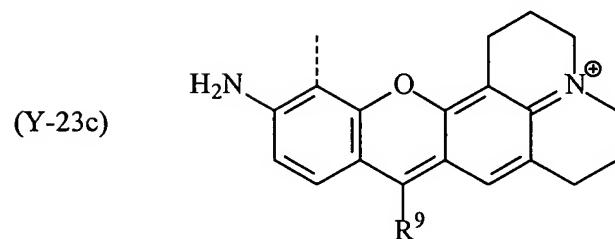
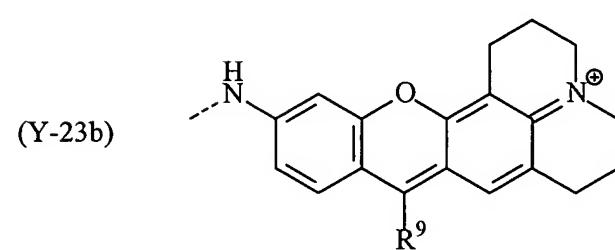
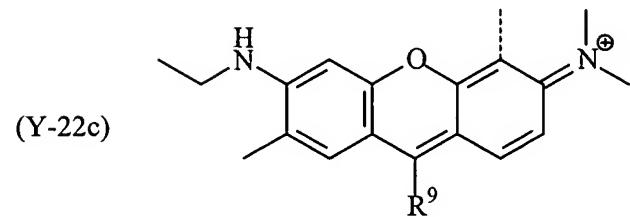
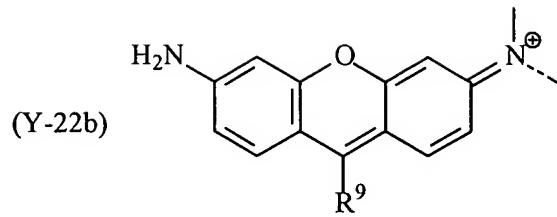


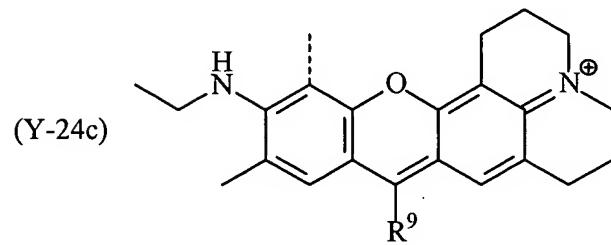
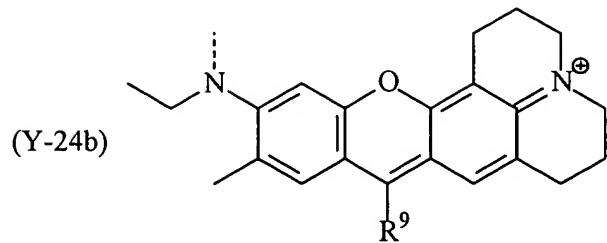
wherein each r is independently an integer from 1 to 6; R<sup>49</sup> is hydrogen, (C<sub>1</sub>—C<sub>6</sub>) alkyl, or an amino acid side chain; and φ is phenyldiyl or substituted phenyldiyl.

90. The labeled nucleoside/tide or nucleoside/tide analog of claim 82 wherein R<sup>22</sup>, R<sup>23</sup>, R<sup>25</sup>, and R<sup>26</sup> are each hydrogen.

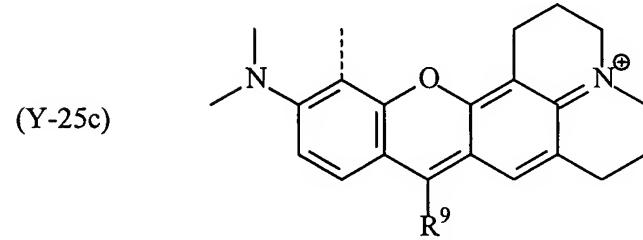
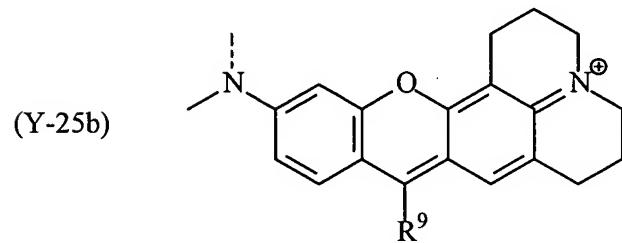
91. The labeled nucleoside/tide or nucleoside/tide analog of claim 82 in which Y<sup>1</sup> is selected from the group consisting of:

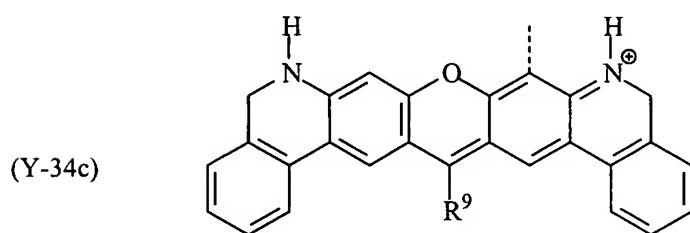
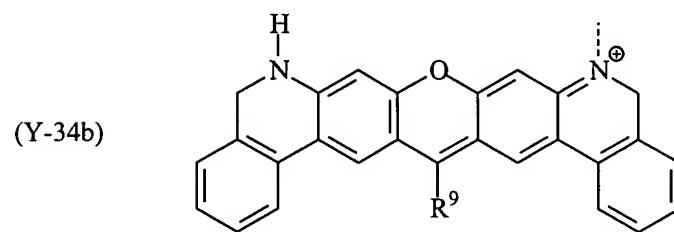
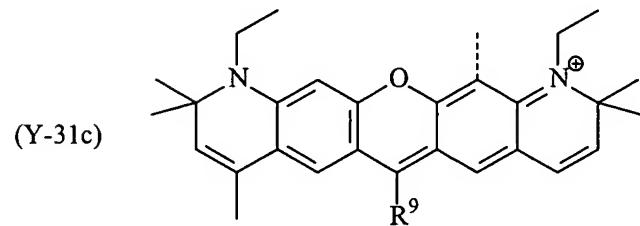
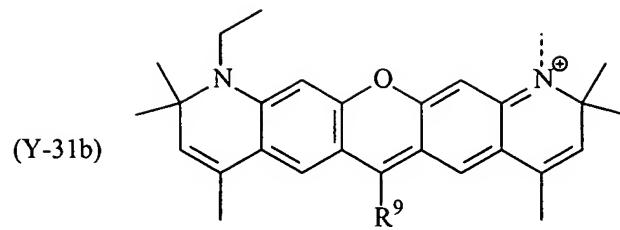


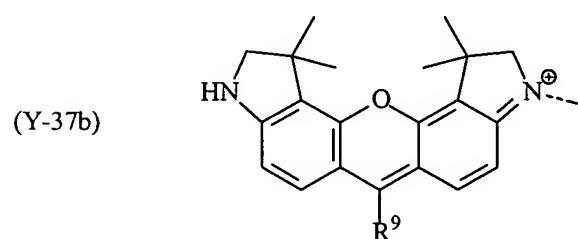
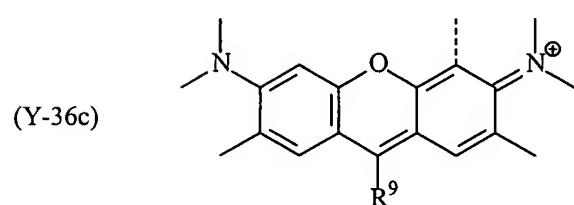
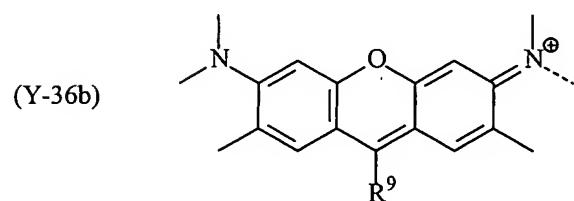
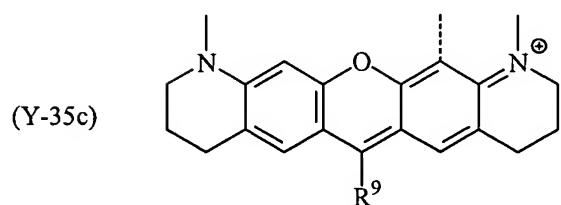
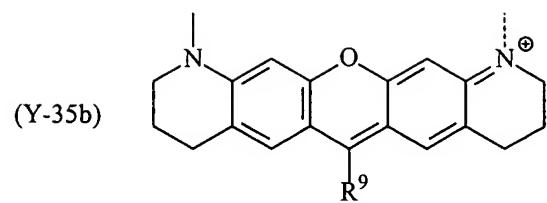


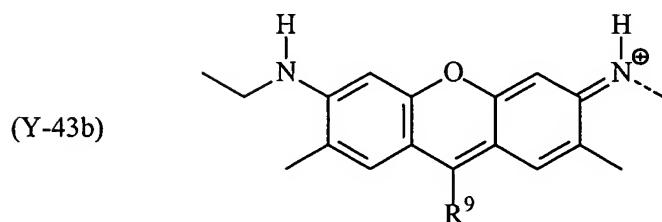
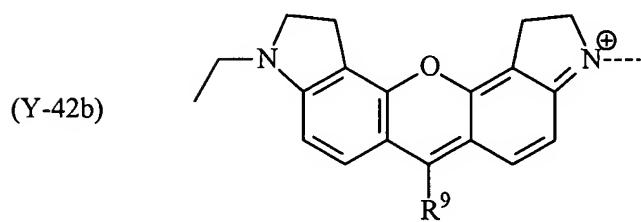
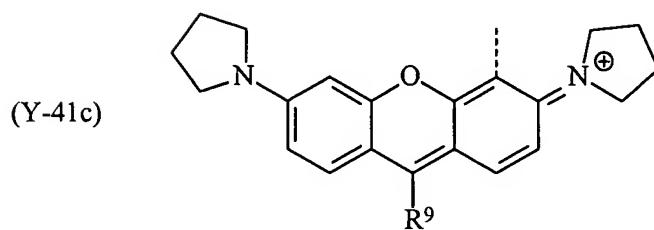
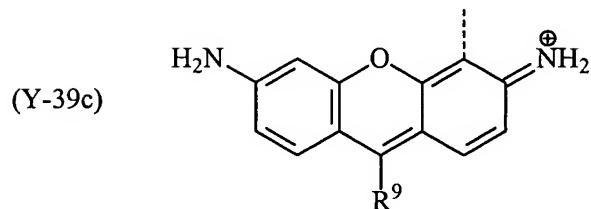
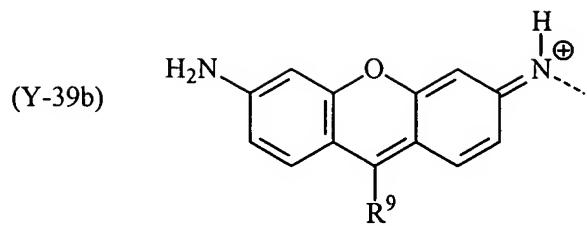


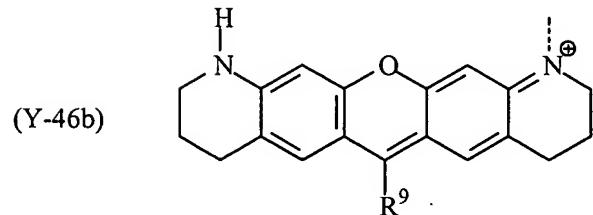
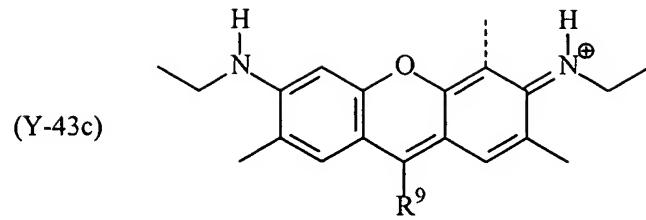
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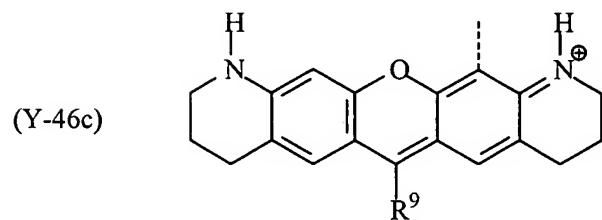






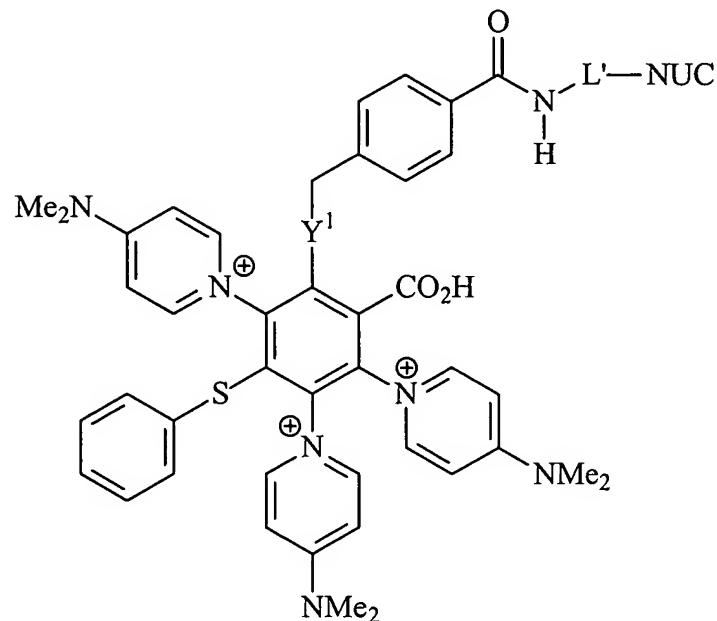


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wherein the dash at the nitrogen or C4 atom indicates the point of attachment of L.

92. The labeled nucleoside/tide or nucleoside/tide analog of Claim 82 which has the structure:



93. The labeled nucleoside/tide or nucleoside/tide analog of Claim 92 in which L' is selected from: —C≡C—CH<sub>2</sub>— and —C≡C—CH<sub>2</sub>—O—CH<sub>2</sub>CH<sub>2</sub>—.

94. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 further comprising a donor dye or an acceptor dye whereby the rhodamine dye and the donor dye or acceptor dye form an energy-transfer dye pair.

95. The labeled nucleoside/tide or nucleoside/tide analog of Claim 94 wherein the donor dye or acceptor dye is a fluorescein, rhodamine, cyanine, phthalocyanine or squaraine.

A' 96. The labeled nucleoside/tide or nucleoside/tide analog of Claim 94 wherein the donor dye or acceptor dye is 4'-aminomethyl-6-carboxyfluorescein and the 4'-aminomethyl-6-carboxyfluorescein is covalently attached to the rhodamine dye by a linker.

97. The labeled nucleoside/tide or nucleoside/tide analog of Claim 96 wherein the aminomethylfluorescein is further covalently attached by a linker L to the nucleobase B of the nucleoside/tide or nucleoside/tide analog.

98. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 which is enzymatically incorporatable.

99. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 which is a terminator.

100. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 which is enzymatically extendable.

101. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 wherein R<sup>71</sup> and R<sup>70</sup> are hydrogen.

102. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 wherein R<sup>71</sup> and R<sup>70</sup> are hydroxyl.

103. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 wherein R<sup>71</sup> is hydroxyl, and R<sup>70</sup> is hydrogen.